

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A method of downsampling a two-dimensional block of discrete cosine transform (DCT) coefficients, comprising:

- (a) providing a two-dimensional $N \times N$ block of DCT coefficients;
- (b) applying a one-dimensional $N/2 \times N$ de-interlacing inverse discrete cosine transform (IDCT) with respect to a first dimension of said block; and
- (c) applying a one-dimensional de-interlacing inverse discrete cosine transform (IDCT) with respect to a second dimension of the results of step (b).

Claim 2 (currently amended) The method of claim 1, wherein:

- (a) said block is $N \times N$; and
- (b) de-interlacing IDCT is $\mathbf{x}_e = \mathbf{T}^t(N/2) \mathbf{z}_p + \mathbf{Q} \mathbf{T}^t(N/2) \mathbf{K}^t \mathbf{z}_o$, where \mathbf{x}_e is a vector of four downsample values, \mathbf{z}_p is an $N/2$ component vector of the even-index components of a column of coefficients in said first dimension of said block, said even-index components in bit-reversed order, \mathbf{z}_o is an $N/2$ component vector of the odd-index components of said column of coefficients in said first dimension of said block, said odd-index components in bit-reversed order, $\mathbf{T}^t(N/2)$ is the $N/2$ -point IDCT, $\mathbf{K} = \mathbf{R} \mathbf{L} \mathbf{R}^t$, where \mathbf{R} is a bit-reversal permutation matrix; and \mathbf{L} is a $N/2 \times N/2$ lower-triangular matrix, and \mathbf{Q} is a $N/2 \times N/2$ diagonal matrix: $\text{diag}[\cos((4m+1)\pi/2N)]$ for $m = 0, 1, \dots, N/2 - 1$.

Claim 3 (original) The method of claim 1, wherein:

- (a) said block is 8×8 .

Claim 4 (currently amended) A method of downsampling a two-dimensional block of discrete cosine transform (DCT) coefficients, comprising:

- (a) providing a two-dimensional $N \times N$ block of DCT coefficients;
- (b) applying a one-dimensional $N/2 \times N$ de-interlacing inverse discrete cosine transform (IDCT) with respect to a first dimension of said block;
- (c) applying a one-dimensional inverse discrete cosine transform (IDCT) with respect to a second dimension of the results of step (b); and
- (d) downsample the results of step (c) with respect to said second dimension.

Claim 5 (currently amended) The method of claim 4, wherein:

- (a) said block is $N \times N$; and
- (b)—said de-interlacing IDCT is $\mathbf{x}_e = \mathbf{T}^t(-4 \frac{N}{2}) \mathbf{z}_p + \mathbf{Q} \mathbf{T}^t(-4 \frac{N}{2}) \mathbf{K}^t \mathbf{z}_o$, where \mathbf{x}_e is a vector of four downsample values, \mathbf{z}_p is an $N/2$ component vector of the even-index components of a column of coefficients in said first dimension of said block, said even-index components in bit-reversed order, \mathbf{z}_o is an $N/2$ component vector of the odd-index components of said column of coefficients in said first dimension of said block, said odd-index components in bit-reversed order, $\mathbf{T}^t(-4 \frac{N}{2})$ is the $4 \frac{N}{2}$ -point IDCT, $\mathbf{K} = \mathbf{R} \mathbf{L} \mathbf{R}^t$, where \mathbf{R} is a bit-reversal permutation matrix; and \mathbf{L} is a $N/2 \times N/2$ lower-triangular matrix, and \mathbf{Q} is a $N/2 \times N/2$ diagonal matrix: $\text{diag}[\cos((4m + 1)\pi/2N)]$ for $m = 0, 1, \dots, N/2 - 1$.

Claim 6 (original) The method of claim 4, wherein:

- (a) said block is 8×8 .